General

Guideline Title

Use of prophylactic antibiotics in labor and delivery.

Bibliographic Source(s)

American College of Obstetricians and Gynecologists (ACOG). Use of prophylactic antibiotics in labor and delivery. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2011 Jun. 12 p. (ACOG practice bulletin; no. 120). [96 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: American College of Obstetricians and Gynecologists (ACOG). Prophylactic antibiotics in labor and delivery. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2003 Oct. 8 p. (ACOG practice bulletin; no. 47).

Recommendations

Major Recommendations

The grades of evidence (I-III) and levels of recommendation (A-C) are defined at the end of the "Major Recommendations" field.

The following recommendations are based on good and consistent scientific evidence (Level A):

- Antimicrobial prophylaxis is recommended for all cesarean deliveries unless the patient is already receiving appropriate antibiotics (e.g., for chorioamnionitis) and that prophylaxis should be administered within 60 minutes before the start of the cesarean delivery.
- For cesarean delivery prophylaxis, a single dose of a targeted antibiotic, such as a first-generation cephalosporin, is the first-line antibiotic of choice, unless significant drug allergies are present.
- Antibiotic prophylaxis is indicated for patients with preterm premature rupture of membranes (PROM) to prolong the latency period between membrane rupture and delivery.
- Antibiotic prophylaxis should not be used for pregnancy prolongation in women with preterm labor and intact membranes. This recommendation is distinct from recommendations for antibiotic use for preterm PROM and group B streptococci (GBS) carrier status.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- For women with a history of a significant penicillin or cephalosporin allergy (anaphylaxis, angioedema, respiratory distress, or urticaria), a single-dose combination of clindamycin with an aminoglycoside is a reasonable alternative choice for cesarean delivery prophylaxis.
- Infective endocarditis prophylaxis is no longer recommended for either vaginal or cesarean delivery in the absence of infection except possibly for the small subset of patients at highest potential risk of adverse cardiac outcomes who are undergoing vaginal delivery.

The following recommendations are based primarily on consensus and expert opinion (Level C):

- Evidence is insufficient to recommend antibiotic prophylaxis for either prophylactic or emergency cerclage.
- In obese patients (body mass index [BMI] greater than 30) undergoing cesarean delivery, consideration should be given to using a higher dose of preoperative antibiotics for surgical prophylaxis.

Definitions:

Grades of Evidence

I: Evidence obtained from at least one properly designed randomized controlled trial.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.

II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Levels of Recommendations

Level A — Recommendations are based on good and consistent scientific evidence.

Level B — Recommendations are based on limited or inconsistent scientific evidence.

Level C — Recommendations are based primarily on consensus and expert opinion.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Infections during labor and delivery

Guideline Category

Management

Prevention

Risk Assessment

Clinical Specialty

Infectious Diseases

Obstetrics and Gynecology

Preventive Medicine

Surgery

Intended Users

Physicians

Guideline Objective(s)

- To aid practitioners in making decisions about appropriate obstetric and gynecologic care
- To present a review of clinical situations in which prophylactic antibiotics are frequently prescribed and to weigh the evidence supporting the use of antibiotics in these scenarios

Target Population

Pregnant women and their neonates

Interventions and Practices Considered

Use of prophylactic antibiotic treatment in the following clinical situations:

- Cesarean delivery
- Preterm premature rupture of membranes (PROM)
- Preterm labor (only in group B streptococcal [GBS] carriers)
- Bacterial endocarditis (only in high risk patients)

Note: Antibiotic prophylaxis was also considered but not recommended in the following situations: cervical/abdominal cerclage, perineal trauma, and the manual removal of placenta.

Major Outcomes Considered

- Rates of maternal infectious complications (febrile morbidity, endometritis, urinary tract infection, wound infection, pneumonia)
- Neonatal infectious morbidity and mortality (respiratory distress syndrome, necrotizing enterocolitis, intraventricular hemorrhage, early-onset sepsis)
- Rate of bacterial endocarditis

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1990 and January 2011. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

I: Evidence obtained from at least one properly designed randomized controlled trial.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.

II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician–gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Level C recommendations.

Rating Scheme for the Strength of the Recommendations

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A — Recommendations are based on good and consistent scientific evidence.

Level B — Recommendations are based on limited or inconsistent scientific evidence.

Level C — Recommendations are based primarily on consensus and expert opinion.

Cost Analysis

Guideline developers reviewed published cost analyses.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists generalists and sub-specialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate use of prophylactic antibiotics in labor and delivery

Potential Harms

- Changes have been reported in resistance patterns of isolated strains of *Escherichia coli* in newborns, particularly after maternal antibiotic administration.
- Risks of antibiotic administration include allergic reactions or anaphylaxis. Skin reactions to cephalosporins include urticaria, rash, and pruritus. A case of anaphylaxis to penicillin after administration for group B streptococci (GBS) prophylaxis has been reported, and there are reports of exfoliative dermatitis and severe immune hemolytic anemia associated with cephalosporin therapy.

Qualifying Statements

Qualifying Statements

These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Safety

Identifying Information and Availability

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2003 Oct (revised 2011 Jun)

Guideline Developer(s)

American College of Obstetricians and Gynecologists - Medical Specialty Society

Source(s) of Funding

American College of Obstetricians and Gynecologists (ACOG)

Guideline Committee

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins-Obstetrics

Composition of Group That Authored the Guideline

American College of Obstetricians and Gynecologists (ACOG) committees are created or abolished and their overall function defined by the Executive Board. Appointments are made for one year, with the understanding that such appointment may be continued for a total of three years.

The majority of committee members are Fellows, but Junior Fellows also are eligible for appointment. Some committees may have representatives from other organizations when this is particularly appropriate to committee activities. The president elect appoints committee members annually.

Financial Disclosures/Conflicts of Interest

Not stated

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Guideline Availability

Electronic copies: None available

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 4500, Kearneysville, WV 25430-4500; telephone, 800-762-2264, ext. 192; e-mail: sales@acog.org. The ACOG Bookstore is available online at the ACOG Web site .

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on October 12, 2007. The information was verified by the guideline developer on December 3, 2007. This NGC summary was updated by ECRI Institute on July 26, 2011.

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